Ontario

Ministry of Health and Long-Term Care
Public Health Division

Ontario Influenza Bulletin 2006-2007 Season

SURVEILLANCE Week 6 (February 4 – 10) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from February 4 – 10, 2007, (Week 6). The analysis for this issue occurred on Thursday February 15, 2007, therefore all data is current to that date unless otherwise specified.

Influenza activity in Ontario during Week 6, 2007, increased slightly in comparison to the previous week. Ninety-seven sporadically occurring cases of influenza A were reported through iPHIS from health units, while 11 new institutional outbreaks of influenza A were also reported. Toronto reported widespread influenza activity, while Central West, Central East, Eastern, North East, North West and South West regions reported 'localized' influenza activity levels.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza@moh.gov.on.ca, 416-212-5323) or Anne-Luise Winter (anne-luise.winter@moh.gov.on.ca, 416-327-7301).

Table 1: Summary of laboratory-confirmed influenza cases and institutional influenza outbreaks by health region (Week 6 2007).

Lab-confirmed Influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	6	11	27	27	6	20	97
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	6	11	27	27	6	20	97
Institutional influenza outbreaks‡	**0**	**0**	**3**	**1**	**2**	**3**	**2**	**11**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

‡ Laboratory confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Laboratory Confirmed cases of influenza by health unit & health region, with an episode date† during Week 6.

Region	Health Unit	Laboratory Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	2	0	2
	North Bay Parry Sound District	2	0	2
	Porcupine	1	0	1
	Sudbury & District	1	0	1
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**6**	**0**	**6**
Eastern	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	2	0	2
	Kingston, Frontenac, Lennox & Addington	6	0	6
	Leeds, Grenville & Lanark	2	0	2
	Ottawa	1	0	1
	Renfrew	0	0	0
	TOTAL EASTERN	**11**	**0**	**11**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge District	11	0	11
	Peterborough County-City	2	0	2
	Simcoe Muskoka District	1	0	1
	York Region	1	0	1
	Peel Region	12	0	12
	TOTAL CENTRAL EAST	**27**	**0**	**27**
Toronto	Toronto	27	0	27
	TOTAL TORONTO	**27**	**0**	**27**
South West	Grey-Bruce	0	0	0
	Elgin-St. Thomas	0	0	0
	Huron County	1	0	1
	Chatham-Kent	0	0	0
	Lambton	0	0	0
	Middlesex-London	4	0	4
	Oxford	0	0	0
	Perth District	1	0	1
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**6**	**0**	**6**
Central West	Brant	0	0	0
	Haldimand-Norfolk	0	0	0
	Hamilton	9	0	9
	Niagara Region	0	0	0
	Halton Region	2	0	2
	Waterloo Region	8	0	8
	Wellington-Dufferin-Guelph	1	0	1
	TOTAL CENTRAL WEST	**20**	**0**	**20**
	TOTAL ONTARIO	**97**	**0**	**97**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* Laboratory confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2006 – February 10, 2007

Region	Health Unit	Laboratory Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	1	0	1
	Thunder Bay District	10	0	10
	TOTAL NORTH WEST	**11**	**0**	**11**
North East	Algoma	7	0	7
	North Bay Parry Sound District	14	0	14
	Porcupine	1	0	1
	Sudbury & District	7	0	7
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**29**	**0**	**29**
Eastern	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	12	0	12
	Kingston, Frontenac, Lennox & Addington	22	0	22
	Leeds, Grenville & Lanark	4	0	4
	Ottawa	8	0	8
	Renfrew	2	0	2
	TOTAL EASTERN	**48**	**0**	**48**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge District	57	1	58
	Peterborough County-City	21	0	21
	Simcoe Muskoka District	36	0	36
	York Region	37	0	37
	Peel Region	89	1	90
	TOTAL CENTRAL EAST	**240**	**2**	**242**
Toronto	Toronto	233	0	233
	TOTAL TORONTO	**233**	**0**	**233**
South West	Grey-Bruce	36	1	37
	Elgin-St. Thomas	0	0	0
	Huron County	24	0	24
	Chatham-Kent	3	0	3
	Lambton	8	0	8
	Middlesex-London	16	0	16
	Oxford	4	0	4
	Perth District	14	0	14
	Windsor-Essex County	3	0	3
	TOTAL SOUTHWEST	**108**	**1**	**109**
Central West	Brant	3	0	3
	Haldimand-Norfolk	7	0	7
	Hamilton	168	2	170
	Niagara Region	46	0	46
	Halton Region	71	0	71
	Waterloo Region	72	0	72
	Wellington-Dufferin-Guelph	68	0	68
	TOTAL CENTRAL WEST	**435**	**2**	**437**
	TOTAL ONTARIO	**1,104**	**5**	**1,109**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Influenza Subtype(s):
During week 6, 3346 isolates were received by the Public Health Agency of Canada, with a total of 412 testing positive for influenza A and 18 for influenza B. The majority of influenza A isolates (213) were from Ontario (51.7%), while 59 (14.3%) were from British Columbia, 52 (12.6%) from Quebec and 33 (8.0%) from Alberta. Thirteen influenza B isolates were from Quebec (72.2%), 3 (16.6%) were from British Columbia, while 2 (11.1%) were from Alberta.*

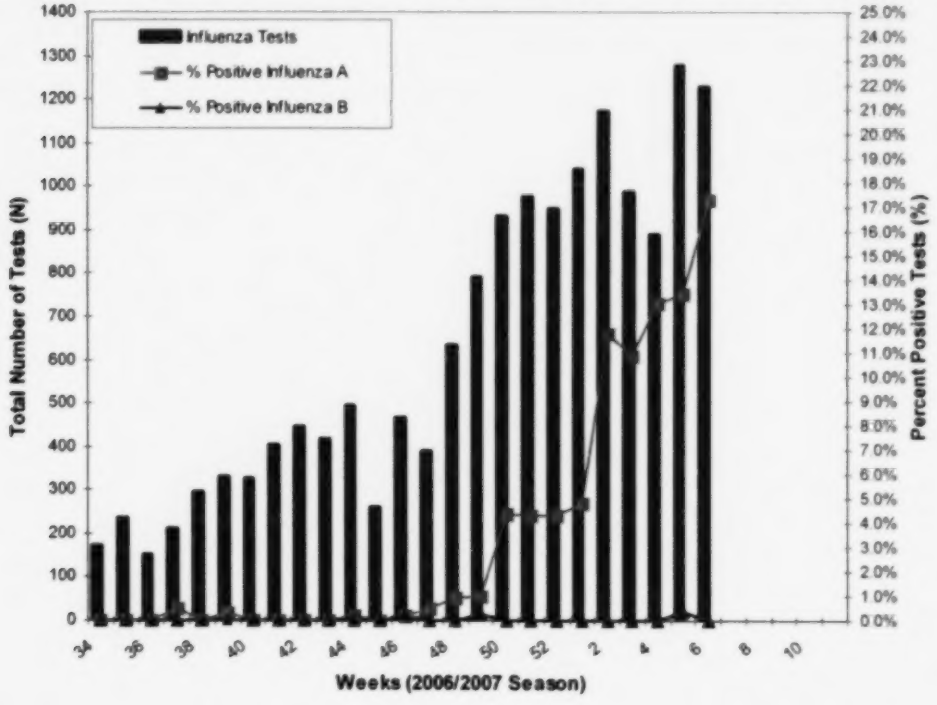
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 279 influenza viruses for the 2006-2007 influenza season: 107 A/New Caledonia/20/1999(H1N1)-like, 153 A/Wisconsin/67/05(H3N2)-like, one A(H1N2) subtype, 4 B/Malaysia/2506/2004-like, and 14 B/Shanghai/361/2002-like. All but the A(H1N2) subtype and the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterized, 88% of the A(H1N1) viruses were from the West and 75% of the A(H3N2) viruses were from Ontario. Note that the number of A(H3N2) strains identified from British Columbia has been increasing in recent weeks.**

Antiviral Resistance:
Since the start of the season, the NML has tested 229 influenza A isolates (98 H1N1, 131 H3N2) for amantadine resistance. None of the H1N1 isolates tested were resistant to amantadine; however, 20% (26/131) of the H3N2 isolates were resistant. Of the 200 isolates (194 influenza A, 6 influenza B) tested for oseltamivir resistance, none were found to be resistant.**

Note: Based on the World Health Organization recommendations, Canada's National Advisory Committee on Immunization (NACI) recommended the **2006-2007** influenza vaccine contain an **A/New Caledonia-like**, an **A/Wisconsin-like** & a **B/Malaysia-like** virus strain.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada for week 6, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for week 5, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week.



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.
Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 6 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	**N**	**% (of outbreaks)**
Influenza A	11	61.1
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Other organisms	4	22.2
No organism identified	3	16.7
TOTAL	***18***	***100***
Total Respiratory Infection Outbreaks of the Season to date**	**N**	**% (of outbreaks)**
Influenza A	69	15.1
Influenza B	1	0.2
Enterovirus	11	2.4
Parainfluenza (All types)	18	3.9
RSV	61	13.3
Rhinovirus	14	3.1
No organism identified	284	62.0
TOTAL	***458***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	313	68.3
Hospitals	26	5.7
Retirement Homes	43	9.4
Other	1	0.2
Unknown	75	16.4
TOTAL	***458***	***100***

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. February 4 - 10, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – February 10, 2007

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	4493	67.6
Patients	521	7.8
Staff	1625	24.4
Total Cases	**6648**	**100**
Deaths		**% (of cases per role)**
Residents	86	1.9
Patients	6	1.2
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	147	3.3
Patients	7	1.3
Staff	5	0.3
Hospitalizations		**% (of cases per role)**
Residents	164	3.7
Staff	1	0.1
Outbreak Related Complications (Influenza Outbreaks)	**N**	**% (of total cases)**
Total Cases		
Residents	530	70.3
Patients	61	8.1
Staff	163	21.6
Total Cases	**754**	**100**
Deaths		**% (of cases per role)**
Residents	15	2.8
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	32	6.0
Patients	2	3.3
Staff	1	0.6
Hospitalizations		**% (of cases per role)**
Residents	38	7.2
Staff	0	0.0

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]
* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – February 10, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2006 – February 10, 2007 by causative organism

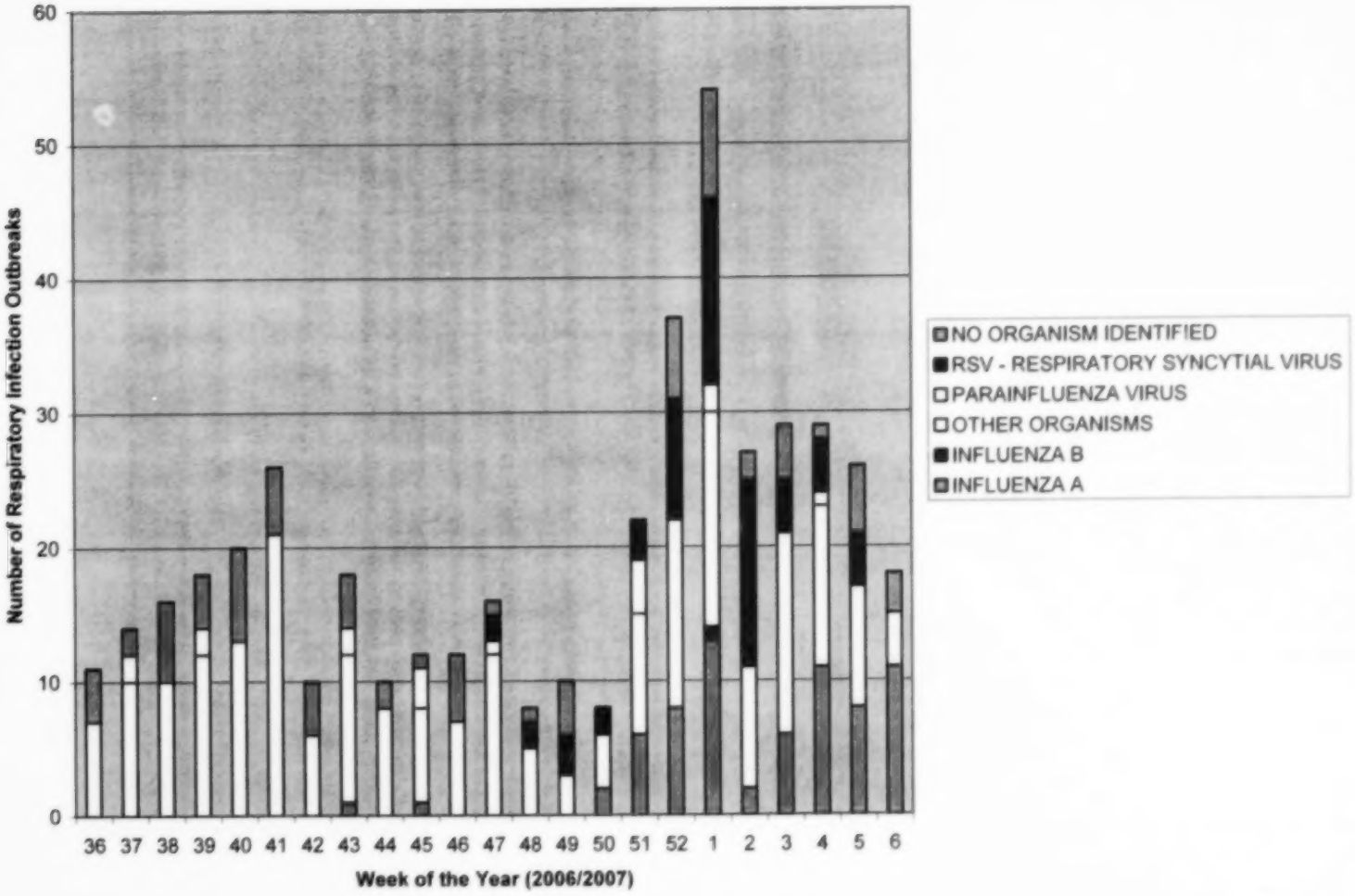
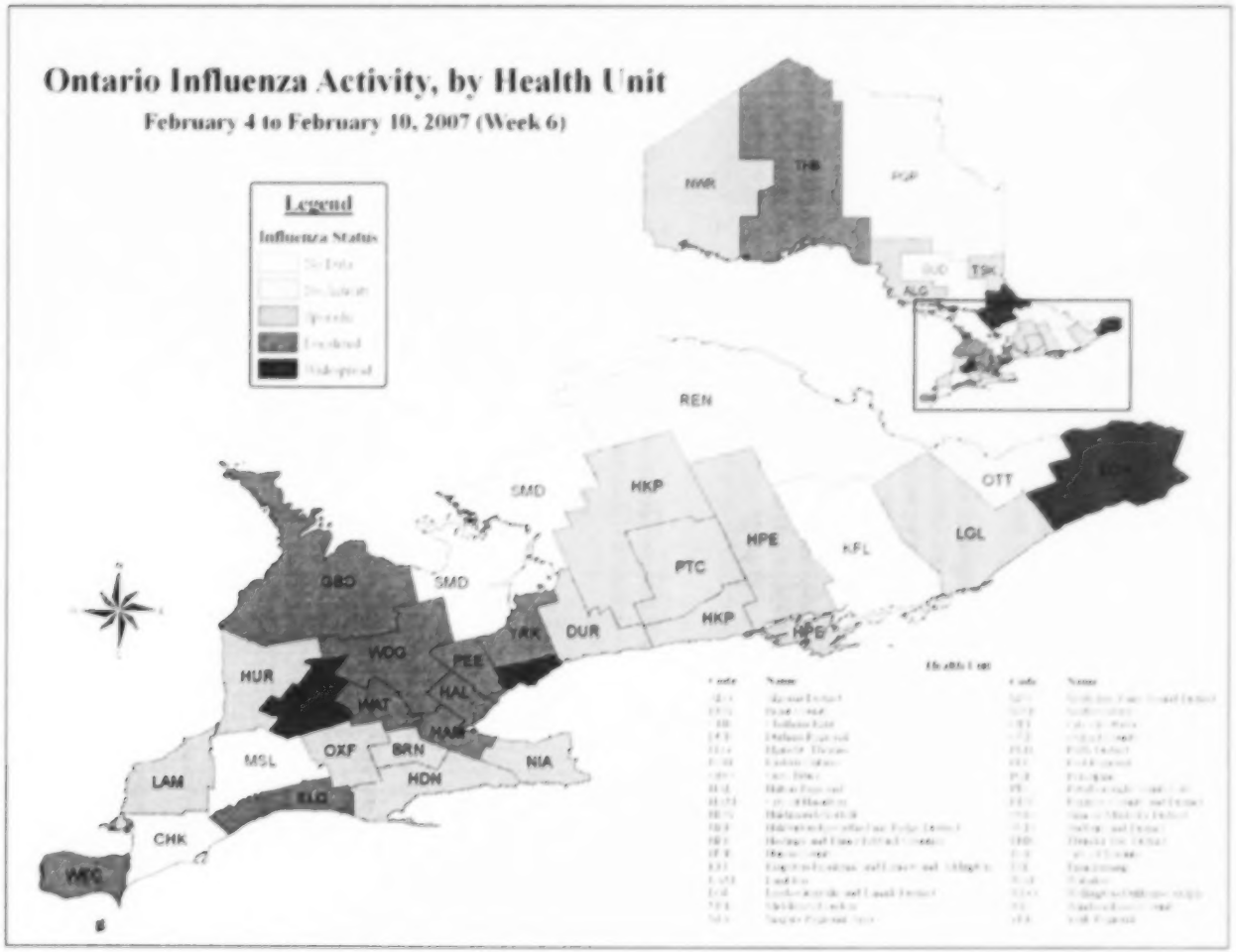


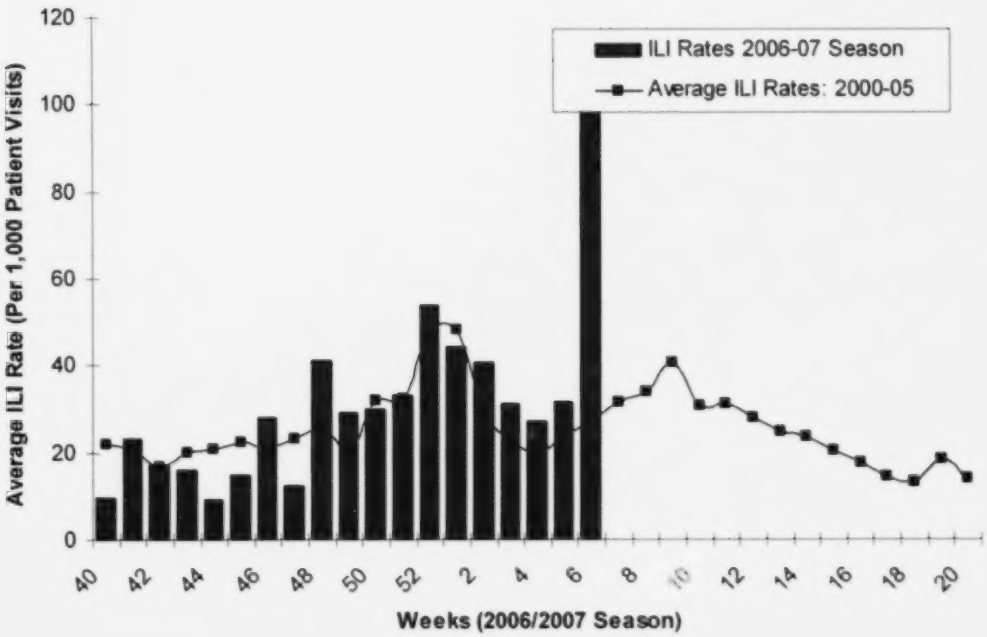
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 6.



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2006- 2007 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

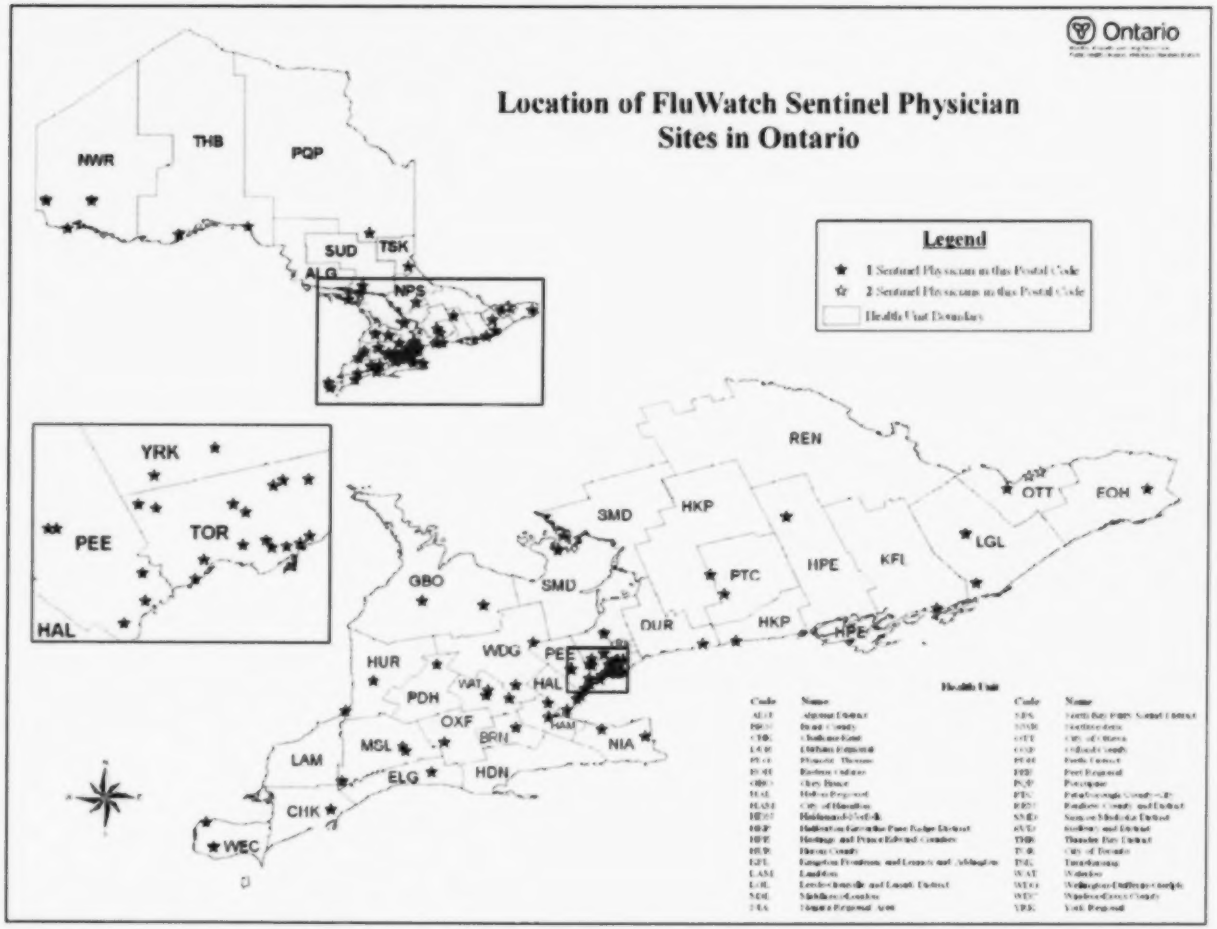
†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 6.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K1L8H2	0	0	0	0	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	2	0	0
K0H2N0	0	0	0	0	0
K7H2W6	0	0	0	0	0
K7L1E9	0	0	0	0	0
K0L1C0	0	0	0	0	0
L1A3W4	0	0	1	1	0
K0L1H0	3	1	0	0	0
K0M1A0	0	0	0	0	0
L1B1H8	0	0	1	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
M6G4A1	1	0	0	0	0
M4E1V8	0	0	0	0	0
M2N6H7	0	0	0	0	0
M2J2Z1	0	0	0	0	0
M9W6N5	0	0	0	0	0
M8V2Z5	0	0	0	0	0
L5J2W4	0	0	2	0	0
L6W2A4	1	0	3	0	0
L6V4H6	0	0	3	0	0
L9W1G2	0	0	0	0	0
N1H4G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L6L1X8	0	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	0	0	0	0
L9H2G2	0	0	1	0	0
L0R1H0	0	0	0	0	0
L2E1Y3	0	0	1	0	0
L0R1B0	2	1	2	2	0
N3R7K8	0	0	0	0	0
N3C2E2	0	0	0	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	0	0	0	0
N4W1P9	0	0	0	0	0
N5C1G5	0	1	2	0	0
N5H1K9	0	0	0	0	0
N8X2G3	2	0	5	2	0
N0M1T0	0	0	2	0	0
N0L1Z0	0	1	1	2	0
N6C2R5	0	0	0	0	0
N0M1L0	0	0	0	1	0
N0C1E0	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0A1C0	0	0	0	0	0
P0M2L0	1	3	4	1	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
P9N3W7	1	0	0	1	0
ILI Sum	11	7	30	10	0
ILI Consultation Rate (per 1,000 patient visits)	102.80	58.33	37.45	28.25	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

Figure 5: Geographic Distribution of Sentinel Physicians in Ontario



Source: National Research System (NaReS), College of Family Physicians of Canada

* Sentinel physician information is reported to the Public Health Agency of Canad

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_05/flubul_mn.html

2. Public Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   www.cdc.gov/flu/

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza cases(s) or outbreak detected during the past four weeks within the influenza surveillance region, however, sporadically occurring **ILI** may be reported†

Sporadic: Sporadically occurring **ILI and laboratory confirmed influenza* case(s) with NO outbreaks** detected within the influenza surveillance region†

Localized: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in less than 50% of the influenza surveillance region(s)**†

Widespread: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)**†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2006-2007 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
7	11-Feb-07	17-Feb-07	20-Feb-07
8	18-Feb-07	24-Feb-07	27-Feb-07
9	25-Feb-07	3-Mar-07	6-Mar-07
10	4-Mar-07	10-Mar-07	13-Mar-07
11	11-Mar-07	17-Mar-07	20-Mar-07
12	18-Mar-07	24-Mar-07	27-Mar-07
13	25-Mar-07	31-Mar-07	3-Apr-07
14	1-Apr-07	7-Apr-07	10-Apr-07
15	8-Apr-07	14-Apr-07	17-Apr-07
16	15-Apr-07	21-Apr-07	24-Apr-07
17	22-Apr-07	28-Apr-07	1-May-07
18	29-Apr-07	5-May-07	8-May-07
19	6-May-07	12-May-07	15-May-07
20	13-May-07	19-May-07	22-May-07
21	20-May-07	26-May-07	29-Jun-07
22	27-May-07	2-Jun-07	5-Jun-07
23	3-Jun-07	9-Jun-07	12-Jun-07
24	10-Jun-07	16-Jun-07	19-Jun-07
25	17-Jun-07	23-Jun-07	26-Jun-07
26	24-Jun-07	30-Jun-07	3-Jul-07
27	1-Jul-07	7-Jul-07	10-Jul-07
28	8-Jul-07	14-Jul-07	17-Jul-07
29	15-Jul-07	21-Jul-07	24-Jul-07
30	22-Jul-07	28-Jul-07	31-Aug-07
31	29-Jul-07	4-Aug-07	7-Aug-07
32	5-Aug-07	11-Aug-07	14-Aug-07
33	12-Aug-07	18-Aug-07	21-Aug-07
34	19-Aug-07	25-Aug-07	28-Sep-07
35	26-Aug-07	1-Sep-07	4-Sep-07